CLAIMS

What is claimed is:

Sub A1

1. A mechanical linkage, comprising

an elongated extruded member comprising a structural cross-section and a linkage end, wherein the structural cross-section is configured to support the linkage end under a mechanical load.

2. The mechanical linkage of claim 1, wherein the linkage end comprises an integral joint member formed by the structural cross-section.

3. The mechanical linkage of claim 1, wherein the linkage end comprises an integral socket formed by the structural cross-section.

4. The mechanical linkage of claim 3, wherein the integral socket comprises an elastomeric joint.

5. The mechanical linkage of claim 3, wherein the integral socket comprises a bushing.

6. The mechanical linkage of claim 3, wherein the integral socket comprises a grommet.

7. The mechanical linkage of claim 3, wherein the integral socket has a square geometry.

8. The mechanical linkage of claim 3, wherein the integral socket has a geometry characterized by a plurality of superimposed squares.

9. The mechanical linkage of claim 3, comprising a desired device having a modular connector disposed in the integral socket.

10. The mechanical linkage of claim 9, wherein the desired device is a joint member.

11. The mechanical linkage of claim 10, wherein the joint member comprises a molded ball.

12. The mechanical linkage of claim 10, wherein the elongated extruded member comprises a metal and the joint member comprises an elastomeric material.

13. The mechanical linkage of claim 9, wherein the desired device comprises a modular socket device having a desired socket geometry.

14. The mechanical linkage of claim 13, wherein the desired socket geometry has an enclosed form.

15. The mechanical linkage of claim 13, wherein the desired socket geometry has an open form.

16. The mechanical linkage of claim 1, wherein the elongated extruded member is extruded lengthwise.

17. The mechanical linkage of claim 16, wherein the linkage end is formed by the structural cross-section at both lengthwise ends of the elongated extruded member.

18. The mechanical linkage of claim 17, wherein the linkage end comprises an integral joint.

19. The mechanical linkage of claim 17, wherein the linkage end comprises an integral socket.

20. The mechanical linkage of claim 17, comprising modular devices disposed in the linkage end at both lengthwise ends of the elongated extruded member.

21. The mechanical linkage of claim 20, wherein the modular devices comprise an elastomeric joint.

22. The mechanical linkage of claim 20, wherein the modular devices comprise a socket device.

23. The mechanical linkage of claim 20, wherein the modular devices are positioned in different angular orientations.

24. The mechanical linkage of claim 1, wherein the elongated extruded member is extruded crosswise.

25. The mechanical linkage of claim 24, wherein the linkage end is formed by the structural cross-section at both lengthwise ends of the elongated extruded member.

26. The mechanical linkage of claim 25, wherein the elongated extruded member is twisted about a lengthwise axis to provide a desired angle between the lengthwise ends.

27. The mechanical linkage of claim 25, wherein the linkage end comprises an integral joint structure.

28. The mechanical linkage of claim 25, wherein the linkage end comprises an integral socket.

29. The mechanical linkage of claim 28, comprising modular devices disposed in the integral sockets at both lengthwise ends of the elongated extruded member.

30. The mechanical linkage of claim 29, wherein at least one of the modular devices comprises an elastomeric joint.

31. The mechanical linkage of claim 29, wherein at least one of the modular devices comprise a socket device.

32. A modular linkage system, comprising:

an extruded arm comprising first and second linkage sockets at opposite lengthwise ends of the extruded arm, wherein the first and second linkage sockets have a geometry configured for multi-angular orientations.

33. The modular linkage system of claim 32, wherein at least one socket of the first and second linkage sockets comprises an integral joint structure.

34. The modular linkage system of claim 33, wherein the integral joint structure comprises an elastomeric member.

35. The modular linkage system of claim 32, wherein at least one socket of the first and second linkage sockets extends crosswise through the extruded arm.

36. The modular linkage system of claim 32, wherein at least one socket of the first and second linkage sockets extends lengthwise through at least a portion of the extruded arm.

37. The modular linkage system of claim 32, comprising a socket device having a modular connector end disposed in at least one socket of the first and second linkage sockets.

38. The modular linkage system of claim 32, comprising a joint structure disposed in at least one socket of the first and second linkage sockets.

39. The modular linkage system of claim 38, wherein the joint structure comprises an elastomeric joint member.

40. The modular linkage system of claim 32, wherein the extruded arm is extruded lengthwise.

41. The modular linkage system of claim 40, wherein the extruded arm comprises a square extruded cross-section.

42. The modular linkage system of claim 40, wherein the extruded arm comprises an extruded cross-section, which is geometrically characterized by a plurality of superimposed squares.

43. The modular linkage system of claim 40, wherein the first and second linkage sockets comprise an operable socket device.

44. The modular linkage system of claim 40, comprising a modular device disposed in at least one socket of the first and second linkage sockets.

45. The modular linkage system of claim 44, wherein the modular device comprises a mechanical joint assembly comprising an elastomeric member.

46. The modular linkage system of claim 44, wherein the modular device comprises an operable socket device.

47. The modular linkage system of claim 44, comprising an opposite modular device disposed in a remaining socket of the first and second linkage sockets, wherein the modular device and opposite modular device are positioned in different angular orientations.

48. The modular linkage system of claim 32, wherein the extruded arm is extruded crosswise.

49. The modular linkage system of claim 48, wherein the extruded arm comprises a twisted portion to position the first and second linkage sockets at different angular orientations.

50. The modular linkage system of claim 48, wherein at least one of the first and second linkage sockets comprises an integral socket device having a polygonal receptacle.

51. The modular linkage system of claim 48, wherein at least one of the first and second linkage sockets comprises a mechanical joint assembly.

52. The modular linkage system of claim 51, wherein the mechanical joint assembly comprises an elastomeric member.

53. A method of forming a modular linkage assembly, comprising:

extruding an elongated member having at least one linkage section at one of opposite lengthwise ends of the elongated member.

54. The method of claim 53, comprising forming a material extrusion device having a desired cross-section for extruding the elongated member.

55. The method of claim 53, comprising providing a modular device configured for insertion into the at least one linkage section.

56. The method of claim 55, wherein providing the modular device comprises extruding a socket structure having a modular connector end.

57. The method of claim 55, wherein providing the modular device comprises molding a socket structure having a modular connector end.

58. The method of claim 55, wherein providing the modular device comprises forming a mechanical joint structure.

59. The method of claim 53, wherein extruding the elongated member having at least one linkage section comprises extruding first and second sockets at the opposite lengthwise ends.

60. The method of claim 59, wherein extruding first and second sockets comprises extruding the elongated member lengthwise through a material extrusion device.

61. The method of claim 60, comprising cutting the elongated member at a desired length.

62. The method of claim 60, wherein extruding the elongated member lengthwise comprises rotatingly extruding the elongated member lengthwise to provide an angular differential between the socket geometry at opposite ends of the elongated member.

63. The method of claim 60, wherein extruding the elongated member lengthwise comprises forming a lateral cross-section having a socket geometry configured for supporting a modular device.

64. The method of claim 63, wherein forming the lateral cross-section having the socket geometry comprises forming an internal cavity having a square geometry.

65. The method of claim 63, wherein forming the lateral cross-section having the socket geometry comprises forming an internal cavity having a geometry characterized by a plurality of superimposed squares.

66. The method of claim 53, comprising inserting a modular socket device into the at least one linkage section.

67. The method of claim 53, comprising inserting an elastomeric joint into the at least one linkage section.

68. The method of claim 53, wherein extruding the elongated member comprises extruding the elongated member crosswise through a material extrusion device.

69. The method of claim 68, comprising cutting the elongated member at a desired thickness.

70. The method of claim 69, wherein extruding the elongated member having at least one linkage section comprises extruding an integral socket device.

71. The method of claim 69, wherein extruding the elongated member having at least one linkage section comprises extruding an integral socket arm for a modular device.

72. The method of claim 71, comprising providing the modular device for removable coupling with the integral socket arm.

73. The method of claim 68, wherein extruding the elongated member having at least one linkage section comprises extruding first and second linkage sections at the opposite lengthwise ends.

74. The method of claim 73, comprising twisting the elongated member to position the first and second linkage sections at different angular orientations.